Amendments to the Specification:

Please insert the Abstract provided on a separate page attached hereto.

Please insert the enclosed sequence listing into the specification.

Page 41, lines 1-3, please replace this paragraph with the following amended paragraph:

HPW FFGKIPRAKA EEMLSKQRHD GAFLIRESES APGDFSLSVK FGNDVQHFKV LRDGAGKYFL WVVKFNSLNE LVDYHRSTSV SRNQQIFLRD IEQVPQQPT (SEQ ID NO:2)

Page 44, lines 21-29 and page 45, lines 1-3, please replace this paragraph with the following amended paragraph:

A sample of the purified and lyophilised Grb2-SH2 C-terminal hydrazide (100 μg) was treated with the protease Lys-C (5 μg) in 100mM ammonium bicarbonate buffer pH 8.2 (100 μL). After incubating at 30°C overnight the reaction was lyophilised and analysed by MALDI mass spectrometry. The observed mass of the C-terminal proteolytic fragment (FNSLNELVDYHRSTSVSRNQQIFLRDIEQVPQQPTG) (SEQ ID NO:3) (corresponds to that of the desired C-terminal hydrazide derivative (expected mass of C-terminal hydrazide proteolytic fragment 4229 Da; observed mass 4231 Da).

Page 45, lines 16-30 and page 46, lines 1-2, please replace this paragraph with the following amended paragraph:

Sequence of human MBP used:

MKIEEGKLVIWINGDKGYNGLAEVGKKFEKDTGIKV
TVEHPDKLEEKFPQVAATGDGPDIIFWAHDRFGGYA
QSGLLAEITPDKAFQDKLYPFTWDAVRYNGKLIAYPI
AVEALSLIYNKDLLPNPPKTWEEIPALDKELKAKGKS
ALMFNLQEPYFTWPLIAADGGYAFKYENGKYDIKDV
GVDNAGAKAGLTFLVDLIKNKHMNADTDYSIAEAAF
NKGETAMTINGPWAWSNIDTSKVNYGVTVLPTFKGQ
PSKPFVGVLSAGINAASPNKELAKEFLENYLLTDEGL
EAVNKDKPLGAVALKSYEEELAKDPRIAATMENAQK
GEIMPNIPQMSAFWYAVRTAVINAASGRQTVDEALK
DAQTNSSSNNNNNNNNNNLGIEGRGTLEG (SEQ ID NO:4)

Page 49, lines 14-30, please replace this paragraph with the following amended paragraph:

The inventors hypothesised that recombinant protein C-terminal hydrazides, generated by hydrazine treatment of the corresponding intein fusion precursor, can be site-specifically modified by chemoselective ligation with aldehyde and ketone containing peptides and labels. To demonstrate such an approach, the ability of a synthetic ketone containing peptide to ligate with the Grb2-SH2 C-terminal hydrazide generated above was investigated. A synthetic peptide corresponding to the c-myc epitope sequence was synthesised GEQKLISEEDL-NH_2 (SEQ ID NO:6), whereby pyruvic acid was coupled to the amino terminus of the peptide as the last step of the assembly. This peptide (designated CH_3COCO-myc) was purifed to > 95% purity by RPHPLC and lyophilised (ESMS expected monoisotopic mass 1328.6 Da; observed mass 1328.6 Da).

Page 52, lines 1-16, please replace this paragraph with the following amended paragraph:

To establish the reactivity of CH_3COCO-Lys(Fl) with C-terminal hydrazide peptides and proteins, the reaction of CH_3COCO-Lys(Fl) with a small synthetic C-terminal hydrazide peptide SLAYG-$NHNH_2$ (SEQ ID NO:5-$NHNH_2$) was investigated. A sample of CH_3COCO-Lys(Fl) and SLAYG-$NHNH_2$ peptide were co-dissolved in 100 mM sodium acetate buffer pH 4.5 to give final concentrations of 0.3 mM and 2 mM respectively. After 20 h incubation at room temperature, the reaction was deemed complete as determined by RPHPLC analysis. All the starting CH_3COCO-Lys(Fl) had reacted to give predominantly a single product. The mass of which corresponds to the desired ligation product, namely conjugation of the two reactants via hydrazone bond formation (ESMS expected monoisotopic mass 1079 Da; observed mass 1080 Da).